

REMARKS

The specification has been amended on page 1 and on page 13 (in addition to that presented in Applicant's previous Amendment), to clearly indicate that the data carrier is a computer-readable storage medium.

The Examiner has stated that "the specification as amended discloses that the computer-readable medium may be realized as data stored on a data carrier (p. 1 and p. 13) or transmitted over a signal transmission system (p. 13)."

Applicants submit that the Examiner is mistaken. The specification as filed, on page 1, line 20 states "The invention also relates to a data carrier storing the computer program.", while on page 13, lines 27-29, states "The invention can be implemented by means of hardware or by means of software running on a computer, and previously stored on a data carrier or transmitted over a signal transmission system." As should be clear from the above, nowhere is it stated that the computer-readable medium may be transmitted over a signal transmission system. Rather, the specification on page 13 had been amended to indicate the computer-readable medium as an example of a data carrier. As currently amended, the specification has been amended on both pages 1 and 13 to indicate that the data carrier is in the form of a computer-readable storage medium. It should now be clear that the computer-readable storage medium is not transmitted over a signal transmission system. (Rather, as an unclaimed embodiment of the

invention, the software program may be transmitted to the computer over a signal transmission system.)

The claims have been amended to more clearly define the invention as disclosed in the written description. In particular, claims 10 have been amended for clarity.

Applicants believe that the above changes answer the Examiner's 35 U.S.C. 101 rejection of claim 10, and respectfully request withdrawal thereof.

The Examiner has rejected claims 1-10 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 7,138,575 to Childs, Jr. et al. in view of U.S. Patent 7,167,567 to Sibbald et al.

The Childs, Jr. et al. patent discloses a system and method for musical sonification of data, in which music is generated in dependence on data values.

The Sibbald et al. patent discloses a method of processing an audio signal, in which Head-Related Transfer Functions are used to simulate a position in space of a stereo signal synthesized from a mono sound source.

As noted by the Examiner "Child fails to show "a mapping unit for mapping the first value of the positionless data signal to a first position in a three-dimensional space around a user's head, and the second value of the positionless data signal to a second position in the three-dimensional space, wherein the audio processing unit changes the characteristic of the audio signal, resulting in the audio signal appearing, to a user listening to the audio signal, to originate from the first position when the

positionless data signal has the first value, and from the second position when the positionless data signal has the second value."

In particular, Applicants note that Child et al., at col. 4, lines 51-66, states:

"In the mapping stage 14, the user establishes the appropriate musical rendering of the desired data. For example, the user is queried about data relationships, preferred musical styles, sound samples, and other data characteristics or preferences. The perception of sound is highly individualized, and the user benefits from guidance and assistance in obtaining the most pleasing and useable configuration of sound mappings. In various embodiments, the user can select sound schemes and approaches that reflect his or her individual preferences and listening style.

"In one embodiment, completion of the data to sound mapping stage yields sound parameters, as shown in FIG. 3, which are preferably suitable for real-time digital audio synthesis or MIDI. The sound parameters correspond to sound characteristics, such as pitch, volume, time signature, tempo, duration, envelope, timbre, space, and effects."

From the above, it should be apparent that Child et al. the varying of any of a numerous variety of musical attributes in order to effect the mapping.

Further, at col. 11, lines 18-23, Child et al. states:

"One embodiment of the headphones preferably allow the listener to hear normal conversation while listening to the sonification. More advanced sound spatialization and localization techniques can also be used, including but not limited to, HRTF (head-related transfer functions) processing, amplitude panning, vector base amplitude panning (VBAP), and wave field synthesis."

From the above, it should be apparent that Child et al. contemplates the use of headphones with the sonification system, and acknowledges some of the capabilities of headphones, notably, sound spatialization and localization techniques using HRTF.

This capability of headphones is noted in Sibbald et al.

However, Applicants submit that this "grocery list" of attributes and capabilities does not render obvious the subject invention, as claimed. This would be tantamount to providing a dictionary of the English language and then stating that this would render the works of Shakespeare obvious.

Rather, the subject invention specifically sets forth "an audio processing unit for delivering the audio signal with a characteristic dependent upon a positionless data signal having at least a first value and a second value" and "a mapping unit for mapping the first value of the positionless data signal to a first position in a three-dimensional space around a user's head, and the second value of the positionless data signal to a second position in the three-dimensional space", "wherein the audio processing unit changes the characteristic of the audio signal, resulting in the audio signal appearing, to a user listening to the audio signal, to originate from the first position when the positionless data signal has the first value, and from the second position when the positionless data signal has the second value".

Applicants submit that it is only through impermissible hindsight reconstruction of the cited references that the Examiner is able to come up with the claimed invention.

In view of the above, Applicants believe that the subject invention, as claimed, is not rendered obvious by the prior art, and as such, is patentable thereover.

Applicants believe that this application, containing claims 1-10, is now in condition for allowance and such action is respectfully requested.

Respectfully submitted,

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